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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION N
09/786,802	04/18/2001	Hans Ruckert	21753	5223
535	7590	10/19/2004	EXAMINER	
THE FIRM OF KARL F ROSS 5676 RIVERDALE AVENUE PO BOX 900 RIVERDALE (BRONX), NY 10471-0900			HAMILTON, ISAAC N	
			ART UNIT	PAPER NUMBER
			3724	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/786,802	Applicant(s) RUCKERT ET AL.	
	Examiner Isaac N Hamilton	Art Unit 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-30 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-30 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the acronym "CPVD" on page 3, line 11, should be defined.

Appropriate correction is required.

Claim Objections

2. Objections to the claims are hereby withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 25-30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masters et al (5,093,975), hereafter Masters, in view of Bergmann et al (4,762,756), hereafter Bergmann, and further in view of Pierantoni et al (5,230,755), hereafter Pierantoni. Masters discloses circular blade made out of tool steel 1, but does not disclose a method of coating the cutting edge with foreign ions. Bergmann teaches a method of coating the cutting edge with foreign ions in columns 6-7, lines 59-48, respectively. It would have been obvious to provide the method of coating the cutting edge with foreign ions in Masters as taught by Bergmann in order

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to increase the hardness of the blade. Note in Bergmann, temperature range in column 1, line 47; hardness in column 7, line 36; titanium in column 9, line 17; nitrogen column 1, line 68; depth of ions in column 7, line 11. Regarding claim 33, it is to be noted that the temperature of 350 degrees in Bergmann is considered to be sufficiently close to the range of 220-280 degrees.

Regarding the depth of ions, 20 microns is considered sufficiently close to the range of 100-200 microns. The combination of Masters and Bergmann discloses everything as noted above, but does not disclose molybdenum. Pierantoni teaches molybdenum in column 1, lines 12 and 22, and in column 3, lines 21 and 28. It would have been obvious to provide molybdenum in the combination as taught by Pierantoni in order to protect the blade against corrosion. Note that when there are only molybdenum ions present, the portion of molybdenum ions is greater than a portion of titanium ions because the portion of titanium ions is zero.

5. To the degree it can be argued that Bergmann does not teach the depth of ion implantation, claims 25-31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masters et al (5,093,975), hereafter Masters, in view of Bergmann et al (4,762,756), hereafter Bergmann, Salik et al (4,704,168), hereafter Salik, and Pierantoni et al (5,230,755), hereafter Pierantoni. Masters discloses circular blade made out of tool steel 1, but does not disclose a method of coating the cutting edge with foreign ions. Bergmann teaches a method of coating the cutting edge with foreign ions in columns 6-7, lines 59-48, respectively. It would have been obvious to provide the method of coating the cutting edge with foreign ions in Masters as taught by Bergmann in order to increase the hardness of the blade. The combination of Masters and Berman discloses everything as noted above, but does not disclose molybdenum. Pierantoni teaches molybdenum in column 1, lines 12 and 22, and in column 3, lines 21 and 28.

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It would have been obvious to provide molybdenum in the combination as taught by Pierantoni in order to protect the blade against corrosion. Note that when there are only molybdenum ions present, the portion of molybdenum ions is greater than a portion of titanium ions because the portion of titanium ions is zero. Masters, Pierantoni and Bergmann do not disclose a depth of ions in the range of 50-500 microns, more specifically 100-200 microns. However, Salik teaches a depth of ions 150 microns in column 3, line 49. It would have been obvious to provide a depth of ions of 150 microns in order to increase fatigue life without sacrificing bulk properties. Note in Bergmann, temperature range in column 1, line 47; hardness in column 7, line 36; titanium in column 9, line 17; nitrogen column 1, line 68; depth of ions in column 7, line 11. Regarding claim 33, it is to be noted that the temperature of 350 degrees in Bergmann is considered to be sufficiently close to the range of 220-280 degrees.

Response to Arguments

Applicant's arguments filed 07/01/2004 have been fully considered but they are not persuasive. Applicant asserts that Pierantoni does not disclose molybdenum in the recited proportions. In the claim limitations the proportion of molybdenum is recited as "a portion of the molybdenum...ions...being greater than a portion of titanium ions," in claim 23, lines 7-9. It is believed that in column 3, lines 1-32, it is disclosed that the protective layer is 0 to 10% molybdenum and 0 to 0.5 % titanium. Although it is true that in some instances molybdenum may compose 0 to 0.49% of the layer, and titanium may compose 0.5% of the layer, Pierantoni clearly discloses a protective layer in which there are more molybdenum ions than titanium ions. Applicant asserts that Pierantoni shows more titanium than tungsten. It is believed that in the

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rejection, the limitation "tungsten ions" is not given any weight. This is due to the limitation, "a portion of the molybdenum or tungsten ions," and the Examiner simply chose to reject the limitation with a reference that discloses more molybdenum ions than titanium ions, rather than more tungsten ions than titanium ions. However, in the table in column 3, lines 1-10, Pierantoni clearly discloses an embodiment wherein tungsten composes up to 3% by mass of the protective layer whilst Titanium composes 0% by mass, which would satisfy the limitation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac Hamilton whose telephone number is 703-305-4949. The examiner can normally be reached on Monday thru Friday between 8am and 5pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Allan Shoap can be reached on 703-308-1082.

In lieu of mailing, it is encouraged that all formal responses be faxed to 703-872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is 703-308-1148.

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IAH

October 6, 2004

Boyer Ashley
BOYER ASHLEY
PRIMARY EXAMINER